

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations



EVALUATOR HAZARDOUS MATERIAL OPERATIONS PRACTICAL SKILLS

Reference material needed for this course:

NFPA 472, Standards for Professional Competence of Responders to
Hazardous Material Incidents, 2013 Edition

Jones and Bartlett Hazardous Material Awareness and Operations 2nd
Edition

ERG, Emergency Response Guidebook, 2012 Edition

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Section I Hazardous Materials Operations Skills Handbook Overview

This handbook has been developed to serve as an instructional resource for instructors and students. Evaluators will use this document as a reference while evaluating skills examinations. It has been determined that the skills contained in this document are necessary to meet the objectives contained in Chapter 5 of NFPA 472 2013 edition. Each skill has been laid out in the following format

- Name and Objective
- Directions
- Equipment/Materials List
- Task List

While this serves as a solid guideline that will cover the vast majority as written it is understood that there may be times that adjustments to the equipment and materials list and the task steps will be necessary to complete the objectives. Adjustments may be required if the host department does not have the exact equipment as listed. In this instance an alternative piece of equipment may be used as long as the intent of the objective is met. It may also be necessary to adjust the task steps based on equipment, procedures or manufacturers recommendations. In the event that an adjustment is necessary during training or testing, documentation of the adjustment should be made in the comment section of the students check off sheet.

The intent of this document is to ensure that all persons who achieve certification have met the minimum NFPA Standard. All persons seeking certification must demonstrate **all** skills contained in this document. It will be the responsibility of the Lead Instructor to schedule the use of facilities and/or assemble all props necessary to ensure that training on all skills is completed. To assist with this we have identified skills that may be difficult to complete by providing guidance that will ensure compliance. The guidance is located on the identified skill sheet. In addition we are recommending the follow actions be taken to provide students with quality instruction and a positive learning experience;

- Determine your resource needs and identify where you can get them
 - Props
 - Books
 - Instructors
 - Evaluators

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

- Your District Fire Training Council is a good starting point with this
- Conduct skill sessions at a training center
- Small classes should combine with neighboring fire departments this will help with ensuring the necessary resources are available

Once the students have successfully demonstrated a skill the instructor shall sign off the appropriate boxes on the Hazardous Materials Practical Skills Competency Profile. The Lead Instructor will sign off at the bottom of the competency profile.

If you find that you are unable to complete any skills you must contact the IDHS Training Staff and provide justification. Your justification will be taken into consideration and further direction will be given at that time. It is critical to preplan your courses to avoid last minute problems. Failure to obtain a prop will not excuse you from completing any of the required skills but will result in delaying the completion of the class.

The skill sheets in this document are used as a reference for the practical skills examination. During practical skills evaluations students will be instructed to complete a series of evolutions that may include any of the skill sheets contained in this document. At no time will a student be asked to perform a skill that is not listed.

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Hazardous Materials Skills

Perform Emergency Decontamination

M-1

Perform emergency decontamination. Directions

For this skills evaluation checklist, students will perform emergency decontamination. You should inform students of the scenario for this skills evaluation checklist and of their roles in the skills evaluation.

Equipment & Materials

- Appropriate protective clothing for decontamination and SCBA
- Hoseline or garden hose with nozzle

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to perform decontamination.		
2.	Ensure that all responders involved in decontamination operations are wearing appropriate PPE for performing emergency decontamination operations.		
3.	Remove the victim from the contaminated area.		
4.	Wash immediately any contaminated clothing or exposed body parts with flooding quantities of water.		
5.	Remove victims clothing and/or PPE rapidly – if necessary, cutting from the top down in a manner that minimizes the spread of contaminants.		
6.	Perform a quick cycle of head-to-toe rinse, wash, and rinse.		
7.	Transfer the victim to treatment personnel for assessment, first aid, and medical treatment.		
8.	Ensure that ambulance and hospital personnel are told about the contaminant involved.		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

9.	Decontaminate tools.		
10.	Proceed to decontamination line for decontamination.		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Obtain Information about a Hazardous Materials using the Emergency Response Guidebook (ERG) and a Material Safety Data Sheet

M-2

Obtain Information about a Hazardous Material using the Emergency Response Guidebook (ERG) and Material Safety Data Sheet.

Directions

For this skills evaluation checklist, students will obtain information about a hazardous material using the *Emergency Response Guidebook* (ERG). Students will obtain information in the following ways: using the U.N. identification number, using the material name, container profile, and placard.

Equipment & Materials

- *Emergency Response Guidebook* (ERG)
- Placards
- U.N. I.D. numbers
- Material names
- Container profile pictures

Skills Evaluation Checklist

Task Steps		Yes	No
Using the U.N. Identification Number			
1.	Identify the four-digit U.N. identification number.		
2.	Refer to the appropriate yellow-bordered pages to find the correct reference guide number.		
3.	Refer to the orange-bordered page with the appropriate guide		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

	number for information on managing the incident.		
4.	For highlighted chemicals refer to the green-bordered pages for initial isolation by looking up the identification number.		

Task Steps		Yes	No
Using the Material Name			
1.	Identify the name of the material.		
2.	Refer to the name of the material in the blue-bordered pages to locate the correct guide number.		
3.	Refer to the orange-bordered page with the appropriate guide number for information on managing the incident.		
4.	For highlighted chemicals refer to the green-bordered pages for initial isolation by looking up the identification number.		

Task Steps		Yes	No
Using the Container Profile			
1.	Identify the profile of the container and locate the profile in the white pages of the ERG.		
2.	Refer to the appropriate guide number in the circle and go to the appropriate orange-bordered page.		

Task Steps		Yes	No
Using the Placard			
1.	Identify the placard and locate it in the white pages of the ERG.		
2.	Refer to the appropriate guide number in the circle and go to the appropriate orange-bordered page.		

Task Steps		Yes	No
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A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Using a Material Safety data Sheet			
1.	Given a material Safety Data Sheet identify the following; A. Physical and Chemical characteristics <ul style="list-style-type: none">• Boiling Point• Specific gravity• Physical State• Odor• Flash point• Vapor pressure• Flammable range• Water Solubility B. Physical Hazards C. Health hazards D. Signs and Symptoms of Exposure E. Routes of Entry F. Exposure Limits <ul style="list-style-type: none">• PEL/PEL-C• TLV/TWA• STEL• IDLH• LC50/LD50 G. Contact Information H. Safe Handling Practices I. Control Measures J. PPE K. Emergency and First Aid procedures		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

For Skill sheets M-3 through M-9 Instructors will give students a scenario and incident action plan that involves the associated skill. The students will operate as a team and the skill will involve assembling the necessary equipment and perform the defensive control function.

Perform defensive control functions Absorption/Adsorption

M-3

Perform defensive control functions Absorption.

Directions

For this skills evaluation checklist, students will perform the defensive control function of absorption. Go over the WARNING below with students.

WARNING! Hazardous materials incidents can be extremely dangerous. Hazardous materials can cause serious injury or fatality. Appropriate personal protective equipment (PPE) must be worn and safety precautions must be followed. The following skill sheet demonstrates general steps; specific haz mat incidents may differ in procedure. Always follow departmental procedures for specific incidents.

Inform students that prior to performing the defensive control function, the Incident Commander or other qualified responder must identify the material and determine the appropriate level of PPE required at the incident based on the hazardous material, training of responders, terrain, weather, and other size-up factors.

Equipment & Materials

- Full protective clothing for two responders and SCBA
- A sorbent material (sawdust,
- Shovels
- Trash hooks

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

clay, charcoal, or polyolfin fibers)

- A simulated hazardous materials liquid
- A secure container with lid (for contaminated material)

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to perform function.		
2.	Verify that all responders involved in the control function are wearing appropriate PPE for performing absorption/adsorption operations and that appropriate hand tools have been selected.		
3.	Select a location to efficiently and safely perform the absorption/adsorption operation.		
4.	Select the most appropriate sorbent.		
5.	Deploy the sorbent in a manner that most efficiently controls the spill.		
6.	Upon mitigation of the incident, notify officer of the status of the incident, place any contaminated material, such as clothing, in an approved container for transportation to a disposal location. Seal and label the container and document appropriate information for department records.		
7.	Decontaminate tools.		
8.	Advance to decontamination line for decontamination. a. Proceed through the decontamination line b. Follow procedures for handling and documenting any contaminated PPE		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions Diking

M-4

Perform defensive control function diking.

Directions

For this skills evaluation checklist, students will perform the defensive control function of diking. Go over the WARNING below with students.

WARNING! Hazardous materials incidents can be extremely dangerous. Hazardous materials can cause serious injury or fatality. Appropriate personal protective equipment (PPE) must be worn and safety precautions must be followed. The following skill sheet demonstrates general steps; specific haz mat incidents may differ in procedure. Always follow departmental procedures for specific incidents.

Inform students that prior to performing the defensive control function, the Incident Commander or other qualified responder must identify the material and determine the appropriate level of PPE required at the incident based on the hazardous material, training of responders, terrain, weather, and other size-up factors.

Equipment & Materials

- Full protective clothing for two responders and SCBA
- Shovels
- A simulated hazardous materials liquid
- Earth, sand, or rock
- A secure container with lid (for contaminated material)

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to perform function.		
2.	Verify that all responders involved in the control function are wearing appropriate PPE for performing diking operations and that appropriate hand tools have been selected.		
3.	Select a location to efficiently and safely perform the diking operation.		
4.	Construct the dike in a location and manner that most efficiently controls and directs the spill to a desired location.		
5.	Upon mitigation of the incident, notify officer of the status of the incident, place any contaminated material, such as clothing, in an approved container for transportation to a disposal location. Seal and label the container and document appropriate information for department records.		
6.	Decontaminate tools.		
7.	Advance to decontamination line for decontamination. a. Proceed through the decontamination line b. Follow procedures for handling and documenting any contaminated PPE		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions Damming

M-5

Perform defensive control function damming. Directions

For this skills evaluation checklist, students will perform the defensive control function of damming. Go over the WARNING below with students.

WARNING! Hazardous materials incidents can be extremely dangerous. Hazardous materials can cause serious injury or fatality. Appropriate personal protective equipment (PPE) must be worn and safety precautions must be followed. The following skill sheet demonstrates general steps; specific haz mat incidents may differ in procedure. Always follow departmental procedures for specific incidents.

Inform students that prior to performing the defensive control function, the Incident Commander or other qualified responder must identify the material and determine the appropriate level of PPE required at the incident based on the hazardous material, training of responders, terrain, weather, and other size-up factors.

Equipment & Materials

- Full protective clothing for two responders and SCBA
- Shovels
- A simulated hazardous materials liquid
- Earth, sand, or rock
- A secure container with lid (for contaminated material)

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to perform function.		
2.	Verify that all responders involved in the control function are wearing appropriate PPE for performing damming operations and that appropriate hand tools have been selected.		
3.	Given a chemical determine the type of dam (overflow/underflow) and the location to efficiently and safely perform the damming operation.		
4.	Construct the dam in a location and manner that most efficiently controls the spill.		
5.	Upon mitigation of the incident, notify officer of the status of the incident, place any contaminated material, such as clothing, in an approved container for transportation to a disposal location. Seal and label the container and document appropriate information for department records.		
6.	Decontaminate tools.		
7.	Advance to decontamination line for decontamination. a. Proceed through the decontamination line b. Follow procedures for handling and documenting any contaminated PPE		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions Diversion

M-6

Perform defensive control function diversion.

Directions

For this skills evaluation checklist, students will perform the defensive control function of diversion. Go over the WARNING below with students.

WARNING! Hazardous materials incidents can be extremely dangerous. Hazardous materials can cause serious injury or fatality. Appropriate personal protective equipment (PPE) must be worn and safety precautions must be followed. The following skill sheet demonstrates general steps; specific haz mat incidents may differ in procedure. Always follow departmental procedures for specific incidents.

Inform students that prior to performing the defensive control function, the Incident Commander or other qualified responder must identify the material and determine the appropriate level of PPE required at the incident based on the hazardous material, training of responders, terrain, weather, and other size-up factors.

Equipment & Materials

- Full protective clothing including SCBA
- Tools, including: shovels, picks, and wheelbarrows
- A simulated hazardous materials liquid
- Earth, sand, or rock
- A secure container with lid (for contaminated material)

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to perform function.		
2.	Verify that all responders involved in the control function are wearing appropriate PPE for performing diversion operations and that appropriate hand tools have been selected.		
3.	Select a location to efficiently and safely perform the diversion operation.		
4.	Construct the diversion in a location and manner that most efficiently controls and directs the spill to a desired location. Working as a team, use hand tools to break the soil, remove the soil, pile the soil, and pack the soil tightly.		
5.	Upon mitigation of the incident, notify officer of the status of the incident, place any contaminated material, such as clothing, in an approved container for transportation to a disposal location. Seal and label the container and document appropriate information for department records.		
6.	Decontaminate tools.		
7.	Advance to decontamination line for decontamination. a. Proceed through the decontamination line b. Follow procedures for handling and documenting any contaminated PPE		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions Retention

M-7

Perform defensive control function retention.

Directions

For this skills evaluation checklist, students will perform the defensive control function of retention. Go over the WARNING below with students.

WARNING! Hazardous materials incidents can be extremely dangerous. Hazardous materials can cause serious injury or fatality. Appropriate personal protective equipment (PPE) must be worn and safety precautions must be followed. The following skill sheet demonstrates general steps; specific haz mat incidents may differ in procedure. Always follow departmental procedures for specific incidents.

Inform students that prior to performing the defensive control function, the Incident Commander or other qualified responder must identify the material and determine the appropriate level of PPE required at the incident based on the hazardous material, training of responders, terrain, weather, and other size-up factors.

Equipment & Materials

- Full protective clothing for two responders and SCBA
- Tools, including: shovels, picks, and wheelbarrows
- A simulated hazardous materials liquid
- A leaking simulated hazardous materials liquid vessel
- A secure container with lid (for contaminated material)
- A retention vessel

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to perform function.		
2.	Verify that all responders involved in the control function are wearing appropriate PPE for performing retention operations and that appropriate hand tools have been selected.		
3.	Select a location to efficiently and safely perform the retention operation.		
4.	Evaluate the rate of flow of the leak to determine the required capacity of the retention vessel.		
5.	Working as a team, retain the hazardous liquid so that it can no longer flow.		
6.	Upon mitigation of the incident, notify officer of the status of the incident, place any contaminated material, such as clothing, in an approved container for transport to a disposal location. Seal and label the container and document appropriate information for department records.		
7.	Decontaminate tools.		
8.	Advance to decontamination line for decontamination. a. Proceed through the decontamination line b. Follow procedures for handling and documenting any contaminated PPE		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions Dilution

M-8

Perform defensive control function dilution.

Directions

For this skills evaluation checklist, students will perform the defensive control function of dilution. Go over the WARNING below with students.

WARNING! Hazardous materials incidents can be extremely dangerous. Hazardous materials can cause serious injury or fatality. Appropriate personal protective equipment (PPE) must be worn and safety precautions must be followed. The following skill sheet demonstrates general steps; specific haz mat incidents may differ in procedure. Always follow departmental procedures for specific incidents.

Inform students that prior to performing the defensive control function, the Incident Commander or other qualified responder must identify the material and determine the appropriate level of PPE required at the incident based on the hazardous material, training of responders, terrain, weather, and other size-up factors.

Equipment & Materials

- Full protective clothing for two responders and SCBA
- A pumping apparatus driver/operator
- A pumping apparatus
- A simulated hazardous materials liquid nitric acid spill contained in a ditch
- A leaking simulated hazardous materials liquid vessel
- Engine, hoselines, and water
- A secure container with lid (for contaminated material)

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to perform function.		
2.	Verify that all responders involved in the control function are wearing appropriate PPE for performing dilution operations.		
3.	Select a location to efficiently and safely perform dilution operations.		
4.	Evaluate the rate of flow of the leak to determine the required capacity of the retention area and the quantity of water required to dilute the material.		
5.	Working as a team, monitor and assess the leak, and advance hoselines and tools to retention area.		
6.	Flow water to dilute spilled material.		
7.	Monitor any diking or dams to ensure integrity of retention area.		
8.	Upon mitigation of the incident, notify officer of the status of the incident, place any contaminated material, such as clothing, in an approved container for transportation to a disposal location. Seal and label the container and document appropriate information for department records.		
9.	Decontaminate tools.		
10.	Advance to decontamination line for decontamination. a. Proceed through the decontamination line b. Follow procedures for handling and documenting any contaminated PPE		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions Vapor Dispersion

M-9

Perform defensive control function vapor dispersion.

Directions

For this skills evaluation checklist, students will perform the defensive control function of vapor dispersion. Go over the WARNING below with students.

WARNING! Hazardous materials incidents can be extremely dangerous. Hazardous materials can cause serious injury or fatality. Appropriate personal protective equipment (PPE) must be worn and safety precautions must be followed. The following skill sheet demonstrates general steps; specific haz mat incidents may differ in procedure. Always follow departmental procedures for specific incidents.

Inform students that prior to performing the defensive control function, the Incident Commander or other qualified responder must identify the material and determine the appropriate level of PPE required at the incident based on the hazardous material, training of responders, terrain, weather, and other size-up factors.

Equipment & Materials

- Full protective clothing for two responders and SCBA
- Atmospheric monitoring equipment
- A hose line with attached fog nozzle
- A water source and pumping apparatus
- A pumping apparatus driver/operator
- A simulated hazardous material vapor vessel
- A secure container with lid (for contaminated material)

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to perform function.		
2.	Verify that all responders involved in the control function are wearing appropriate PPE for performing vapor dispersion operations.		
3.	Select a location to efficiently and safely perform the vapor dispersion operation.		
4.	Apply agent through vapor cloud to disperse vapors.		
5.	Constantly monitor the leak concentration, wind direction, exposed personnel, environmental impact, and water stream effectiveness.		
6.	Upon mitigation of the incident, notify officer of the status of the incident, place any contaminated material, such as clothing, in an approved container for transportation to a disposal location. Seal and label the container and document appropriate information for department records.		
7.	Decontaminate tools.		
8.	Advance to decontamination line for decontamination. a. Proceed through the decontamination line b. Follow procedures for handling and documenting any contaminated PPE		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions Place a Foam Line In-Service Using an Inline Eductor

M-10

Place a foam line in service using an In-line eductor.

Directions

For this skills evaluation checklist, students will place a foam line in service. To provide a foam stream, the firefighter or apparatus driver must be able to correctly assemble the components of the system. The following procedure describes the steps for placing a foam line in service.

Equipment & Materials

- Full protective clothing including SCBA
- One pumper
- Foam eductor
- Hose and nozzle with compatible eductor
- Two buckets of foam concentrate
- Water supply

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to place line in service.		
2.	Select the proper foam concentrate for the spilled fuel involved.		
3.	Place the foam concentrate at the eductor.		
4.	Open enough buckets of foam concentrate (training foam or liquid detergent such as dawn dish soap can be used) to handle the task.		
5.	Check the eductor and nozzle for hydraulic compatibility (rated for the same flow).		
6.	Adjust the eductor metering valve to the same percentage rating as that listed on the foam concentrate container.		
7.	Attach the eductor to a hose capable of efficiently flowing the rated		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

	capacity of the eductor and the nozzle.		
8.	Attach the attack hoseline and desired nozzle to the discharge end of the eductor. Avoid kinks in the hose.		
9.	Place the eductor suction hose into the foam concentrate.		
10.	Open nozzle fully.		
11.	Increase the water-supply pressure to that required for the eductor. Be sure to consult the manufacturer's recommendations for the specific eductor.		
12.	Report to officer status or completion of assigned task.		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions Vapor Suppression M-11

Perform defensive control function Vapor Suppression

Directions

A team of firefighters, while wearing full PPE and SCBA, will apply foam to a simulated Class B spill. You shall give students a common hydrocarbon liquid or polar solvent. Students should be prepared to select the correct foam type and set or request the correct foam percentage. Skill sheet M-10 shall be used in conjunction with this skill sheet. Inform each firefighter of their position and tasks to perform. A safety officer should check each student's gear before you enter the danger zone.

Ensure firefighter safety at all times during this training evolution. Have students repeat this exercise, rotating the hoseline duties so that each student has a chance to perform on the nozzle.

Equipment & Materials

- Full protective clothing and SCBA for all firefighters
- Hand lines appropriate for the size of prop
- Attack line supplied by a separate water source
- Back-up line supplied by a separate water source
- Foam proportioning system
- Aspirating nozzles and/or attachments
- Handheld radios

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Skills Evaluation Checklist

Task Steps		Yes	No
Vapor Suppression			
1.	Confirm order with officer to suppress vapors.		
2.	Size up incident scene for hazards. a. Spill conditions b. Type of fuel c. Wind conditions d. Eliminate all ignition sources		
3.	Verify foam type and concentration is appropriate for fuel.		
4.	Verify foam line is functioning and ready for attack.		
5.	Extend hoseline to point of application.		
6.	Apply foam solution as directed. a. Rain down method b. Bank down method c. Roll on method		
7.	Maintain situational awareness.		
8.	Report to officer status or completion of assigned task.		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions Remote Valve Shut-Off M-12

Perform defensive control function Remote Valve Shut Off.

Directions

For this skills evaluation checklist, students will perform the defensive control function of remote valve shut-off. Go over the WARNING below with students.

WARNING! Hazardous materials incidents can be extremely dangerous. Hazardous materials can cause serious injury or fatality. Appropriate personal protective equipment (PPE) must be worn and safety precautions must be followed. The following skill sheet demonstrates general steps; specific haz mat incidents may differ in procedure. Always follow departmental procedures for specific incidents.

Inform students that prior to performing the defensive control function, the Incident Commander or other qualified responder must identify the material and determine the appropriate level of PPE required at the incident based on the hazardous material, training of responders, terrain, weather, and other size-up factors.

Equipment & Materials

- Full protective clothing for two responders and SCBA
- A simulated hazardous materials liquid
- An operable valve

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Confirm order with officer to perform function.		
2.	Verify that all responders involved in the control function are wearing appropriate PPE for performing remote valve shut-off operations and that appropriate hand tools have been selected.		
3.	Consult with facility personnel to locate control valve.		
4.	Confirm with facility personnel that it is safe to shut-off control valve.		
5.	Ensure that all valves and controls are locked out according to facility procedures		
6.	Communicate the status of the control valve to the incident commander.		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Establish Control of a Hazardous Materials Incident

M-13

Establish control of a hazardous materials incident.

Directions

For this skills evaluation checklist, students will assume initial control of a hazardous materials incident. Go over the WARNING below with students.

WARNING! Hazardous materials incidents can be extremely dangerous. Hazardous materials can cause serious injury or fatality. Appropriate personal protective equipment (PPE) must be worn and safety precautions must be followed. The following skill sheet demonstrates general steps; specific haz mat incidents may differ in procedure. Always follow departmental procedures for specific incidents.

Inform students that they are going to assume control of the hazardous materials incident. They must make an initial identification of the material and determine the appropriate level of PPE required at the incident based on the hazardous material, training of responders, terrain, weather, and other size-up factors.

Equipment & Materials

- Department communication equipment
- Emergency Response Guidebook
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-

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Skills Evaluation Checklist

Task Steps		Yes	No
1.	Upon arrival establish command according to local procedures.		
2.	Verify the presence of hazardous materials (placards, labels, visual clues).		
3.	Make all necessary notifications a. Hazardous Materials Team b. EMS c. Law Enforcement		
3.	Determine isolation distance using the ERG.		
4.	Isolate the incident and establish initial zones.		
5.	Establish emergency decontamination.		
6.	If terrorism/WMD is suspected ensure the appropriate notifications are made and that steps are taken to preserve evidence.		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Section III

Practical Skills Examination Procedure

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Overview

The Hazardous Materials Operations Practical Skills Final Examination is designed to test a candidate's ability to show competency by simulating response conditions. This is accomplished by taking a group of skills contained in the Hazardous Materials Operations Skills Handbook (the skills identified to meet the minimum standard of NFPA 472 2013 Edition) and constructing them into various scenarios. All available scenarios will be placed on the IDHS and Indianafiretraining.com website. Instructors shall familiarize themselves with the scenarios and are encouraged to use them during the skills portion of the class. Candidates shall also familiarize themselves with the scenarios so they have a clear understanding of the examination process. It must be understood that any of the skills contained in the Hazardous Materials Operations Skills Handbook can be used in the scenarios for final practical examination purposes. The scenarios will be periodically revised or replaced to ensure credibility. Candidates must therefore be prepared to test on any practical skill required.

The scenarios attempt to represent an actual emergency response and the candidates represent a company with the evaluator handing out the team assignments. The purpose of this approach is to allow the candidates to understand how all of the individual pieces taught are put together. This also allows candidates to test on a wide variety of skills that is a fair representation of all available skills. With this in mind it must be understood that some of the scenarios will not be representative of how company assignments are handed out for a specific fire department.

Test Validity and Reliability

The IFTS ensures test validity by referencing each test evolution to the appropriate NFPA standard(s) and dedicated reference material(s). Only certified fire service instructors are permitted to evaluate test evolutions. Additionally, the Indiana Board of Firefighting Personnel Standards and Education shall approve all practical skills. Reliability is evaluated as each examination is conducted and statistics are compiled. Based upon periodic review, evolutions are retained, redesigned or removed from the test.

Examination Administration Guidelines

Practical skills examinations shall be administered only to individuals who meet all prerequisites.

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

All practical skill examination evolutions will be available on the IDHS and Indianafiretraining.com websites. Instructors are urged to use these evolutions during training.

Hazardous Materials Operations Practical Skills Examinations shall only be conducted at sites where all necessary examination props are available. The minimum equipment necessary is listed below

- Leaking vessel (55 gallon drum)
- Shovels
- Absorbent Materials (dirt or sand is appropriate)
- Manikin with disposable clothing
- Foam eductor, hose and nozzle
- Foam concentrate (training foam or dish detergent is appropriate)
- A water supply
- Sandbags and PVC pipes (4"-6" in diameter and 4'-6' long)
- DOT Emergency Response Guidebook

Registration of the course shall be the responsibility of the Lead Instructor and shall be completed within thirty (30) days prior to the start date.

The Lead Evaluator shall contact IFTS staff via email at least fifteen (15) days before the examination date for scenario assignment. The Lead Evaluator shall not communicate the scenario assignment to anyone until the day of the evaluation. The Lead Evaluator is responsible for ensuring all necessary props are in place prior to the examination date.

Only the Evaluators and Lead Evaluator will be involved in the administration of practical skills certification examinations. Evaluators shall not have been the candidate's instructor(s) for the skills they are evaluating. The Lead Evaluator shall not have taught any portion of the class.

The Lead Instructor should be present for the examination to assist in providing remedial training to candidates who are unsuccessful in the completion of a skill station or to assist the Lead Evaluator as necessary.

The Lead Evaluator shall monitor registration for the practical skills examination.

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Candidates reporting to the examination site shall have all equipment and/or materials necessary to participate including personal protective equipment (PPE), and self-contained breathing apparatus (SCBA). In addition all candidates must present a completed Practical Skills Competency Profile (all skills signed off and the document signed by the Lead instructor) to the Lead Evaluator prior to being eligible to participate in the Final Skill Examination. The only exception to this will be if the Lead Instructor notifies the Lead Evaluator prior to the exam date and verifies the Practical Skills Competency Profiles are completed for his/her students. This notification shall be in writing and it is up to the Lead Evaluator to determine if this is acceptable. The Lead Evaluator shall send a written acknowledgement to the Lead Instructor.

Facial hair requirements of NFPA Standard 1500 and 29 CFR 1910.134 (q)(1) shall be followed in certification practical skills examinations which contain a SCBA use requirement.

Candidates shall provide photo ID for verification upon arrival at the test site.

Any individual whose name does not appear on the roster or does not have required paperwork will not be permitted to participate in the examination unless approved by the Lead Evaluator.

All exams shall be graded on a pass/fail basis.

Candidates shall be graded on an individual basis for all non-team related skills such as use of ERG. Candidates will be graded as a two person team for all team related skills such as defensive control functions (damming, diking emergency decontamination). In the event of a team failure team members may be split up for the retest but this is not a requirement. If one student cannot complete a scenario due to injury, physical inability or capability another person may be substituted to allow the other team member to complete the scenario. The substituted person can be another student that is not currently engaged in an examination scenario, an instructor, evaluator or fire department personnel that is present. The substituted person shall not be the lead person in the evolution and cannot provide instruction to the testing candidate. If it is determined to use a substitute the Lead Evaluator shall make detailed documentation of why the substitution was necessary.

Each candidate will complete one (1) full scenario comprised of two (2) team evolutions each that are designated by an (a) or (b) after the scenario number.

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Each evolution is graded independently so if candidates are completing Scenario 1 and fail the skills assigned to 1a and pass 1b they only need to retest on 1a to pass Scenario 1.

On the scenario skill sheet there are portions of the scenario considered to be critical fail points. All of these are noted on the scenario skill sheet. Any student or team that fails a portion that is considered as critical they automatically fail that team evolution and must complete that team evolution during a retest (as long as they remain eligible for a retest. If a candidate or team that fails an individual skill that is not noted as a critical skill then they only need to complete that individual skill and not the entire team evolution. For instance, a team fails to establish control of the incident, since that skill is considered to be critical they will complete the entire team evolution. If a candidate or team fails to construct a dam since it is not considered to be critical they only need to construct a dam to pass the scenario. However if a candidate or team fails more than one (1) individual skills contained in a team evolution they should complete the entire team evolution as a retest even if none of failed skills are critical.

Candidates will be allowed to retest the same day per the retest allowance for the pertinent certification category and/or level. Lead Evaluators will only conduct such retests after all other candidates have completed testing. A different Evaluator observed by the Lead Evaluator shall conduct retesting. If the candidate fails a retest they must complete the entire Final Skills Examination on a future date.

Candidates failing more than one (1) skill for the pertinent certification category and/or level are required to complete a retest at a future date.

The rules for each certification category and/or level exam shall be followed in their entirety.

Practical skills examinations will be conducted weather permitting. Cancellations due to adverse weather conditions shall be at the discretion of the Lead Evaluator.

The estimated time for practical skills examinations is 4 hours not including breaks.

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Timing begins at the completion of Lead Evaluator's address to the candidate group and ends with completion of all required stations, including any same-day retests by each candidate group.

Any additional costs incurred for complete retests shall be the responsibility of the candidate.

Examination Administrative Procedure

Prior to commencement of administration of an exam, the Lead Evaluator will assign the Evaluators to the various stations. The Lead Evaluator will, at the same time, assemble the Evaluators equipment:

- Clipboards
- Skills check-off forms for the pertinent exam
- Rehab supplies
- Communication equipment
- Pens/pencils

The Lead Evaluator will assemble the Evaluators and inform them of the skill choices assigned to the examination. The Evaluators perform setup of their particular station based on the skill choices assigned.

Upon completion of set-up by the Evaluators, the Lead Evaluator will perform a complete safety and operational site check.

The Lead Evaluator will assemble the Evaluators and address "best practices" for the pertinent exam, including:

- Safety being the #1 priority
- Pass/fail criteria
- Remind evaluators they are testing, not teaching
- Stress fairness and consistency
- Proper documentation and justification of pass/fail
- Complete explanations of failure to the candidates
- Disagreements between them and the candidates must be deferred to the Lead Evaluator
- They should be monitoring the physical well-being of the candidates as they participate/pass through their individual stations

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

- Determine an emergency signal that will require candidates to end the scenario
- Injury or illness reporting

Also at this time, candidates will:

- Be checked for compliance with equipment/material requirements
- Be checked for compliance with facial hair requirements if applicable

The Lead Evaluator assembles the candidates and addresses them regarding the exam format:

- Makes candidate team assignments (candidates will be in teams of 2, it is also acceptable for the Lead Instructor to have the team assignments made prior to the test date)
- Describes the stations and their locations, what teams are assigned to the skill stations and how the team rotations will work
- Instructs candidates to notify an evaluator immediately in the event of injury or illness
- Emergency signal to indicate that candidates must end the scenario and report to their assigned evaluator
- May use the DOT-ERG book anytime while at hazmat stations
- Stresses that the candidates follow directions from the Evaluator and/or Lead Evaluator
- Candidates shall not leave the staging area until instructed to disperse
- Candidates are to stay with their assigned team at all time
- Candidates shall stay at the skill station assigned until released
- Candidates shall not discuss what was completed at any skill stations with any candidates that have not completed that particular skill station. Doing so may result in the failure of all students involved.
- Stresses the importance of the candidates keeping themselves hydrated and tells them location of water dispensers.
- Explains that 1 skill failure can be retested the same day
- Explains that 2 or more skills failed means complete retest on another day
- Stresses safety on the candidates part
- Asks for and answers any questions the candidates have relating to the process
- Introduces the Evaluators
- Explain this is a testing, not a teaching event

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

- Stress safety first to the candidates – wearing appropriate PPE/SCBA for the various stations and any additions/deletions due to weather conditions

The testing site shall provide secure staging for students to ensure unevaluated students cannot observe candidates being tested. Apparatus shall be in place at each skill station to ensure that candidates from other skill stations cannot observe the activities at other skill stations. Candidates are not permitted to communicate with each other during the examination.

Exam Commencement

Evaluators shall consistently provide the same directions to the candidates for each of the selected station tests. They are to read the scenarios exactly as written.

Evaluators shall instruct each candidate at his/her skill station of their team assignment.

Evaluators shall ask if the candidates as individuals or team members have any questions regarding the job performance requirement(s). All questions are to be answered.

Once the evaluator has completed the briefing he/she will collect the skills check sheet from each candidate.

The evaluator shall instruct the candidates to perform the required test function(s).

Once the candidates have completed their assignments the evaluator shall direct them where to go and to wait for further instructions.

All candidates shall complete every skill assignment for the examination.

Once all skill stations have completed the current rotation the Lead Evaluator will notify all skill station Evaluators to direct the teams to go to their next assigned station.

This shall continue until all teams have completed the rotation through all skill stations.

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

When the examination is concluded any candidates that are required to retest shall be informed of where to go.

While observing the performance, Evaluators follow the checklist provided on each candidate's station skills check-off form. Safety issues are a priority during this observance.

Evaluators shall grade the candidates, either as individuals for individual tests or as team members for team tests, utilizing the check-off form.

Evaluators shall document in ink and explain the pass/fail results on the proper form.

Upon completion of each skill station evaluators shall return the completed skills check-off forms to each candidate.

Upon completion of the skills examination the Lead Evaluator shall collect all completed skill sheets and do the following as necessary;

- Sign the application for certification for all successful candidates
- Arrange all retests as necessary
- Advise all candidates who are not eligible for a retest or who have had an unsuccessful retest that they must make arrangements to take another skills examination.

Completed skill sheets will be returned to the candidate and shall be placed in their personnel/training file at their fire department.

Throughout the course of the exam, the Lead Evaluator makes himself/herself available to:

- Answer questions
- Maintain an expedient flow of the candidate/teams from staging area to station, back to staging area.
- Provide replacements in the event of equipment malfunction or failure
- Replenishes water supply at refreshment dispensers
- Candidates
- Evaluators
- Coordinator

Throughout the course of the exam the Lead Evaluator:

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

- Observe activities at all stations on a rotating basis
- Monitor Evaluator directions
- Listen to candidates questions and Evaluators answers
- Answer questions directed to the Lead Evaluator
- Settle disputes that may arise between candidates and Evaluators
- Make final pass/fail decisions in dispute situations
- Provide same-day retest forms in applicable failure situations
- Notify candidates to completely retest on a future date in failure and retest failure situations
- Ensure all certification documentation is complete, signed and correct for submission to the IFTS certification branch

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Practical Skills Competency Profile

Student Name (Last, First, MI)		PSID Number	
Fire Department / Agency		IDHS Course Number	

Hazardous Materials Operations Skills

	Training Date	Instructor Name
Perform emergency decontamination. (<i>NFPA® 472, 5.4.1</i>)		
Obtain Information about a Hazardous Material using the Emergency Response Guidebook (ERG) and Material Safety Data Sheet. (<i>NFPA® 472, 5.4.1</i>)		
Personnel Protective Equipment, Donning & Doffing PPE (<i>NFPA 472; 6.2.4.1-3, 4</i>)		
Perform defensive control functions, Absorption/Adsorption. (<i>NFPA® 472, 6.6.4.1</i>)		
Perform defensive control functions, Diking, Damming, Diversion, Retention (<i>NFPA® 472, 6.6.4.1</i>)		
Perform defensive control functions, Remote Valve Shut-off (<i>NFPA® 472, 6.6.4.1</i>)		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Perform defensive control functions, Vapor Dispersion (<i>NFPA® 472, 6.6.4.1</i>)		
Perform defensive control functions, Vapor Suppression, place foam line in-service (<i>NFPA® 472, 6.6.4.1</i>)		
Perform defensive control functions, Vapor Suppression (<i>NFPA® 472, 6.6.4.1</i>)		
Communicating the status of Planned Response (<i>NFPA® 472, 5.5.2.1</i>)		

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Scenario 1

Incident 1

Condition

You are dispatched to the report of a possible hazardous materials incident. You arrive and find an automobile accident involving a truck and a tree. The truck has a visible placard with UN# 1170 and a small leak is coming from the rear of the vehicle with a small pool of liquid forming on the ground. You are to take control of the incident and perform necessary control measures to minimize exposure.

SKILL (Team 1A)	Skill Sheet	COMPLETED
**Establish control of the Incident, perform scene size-up (<i>identify any hazards</i>)	M-13	<input type="checkbox"/> <input type="checkbox"/>
**Establish isolation perimeter and make notifications	M-13	<input type="checkbox"/> <input type="checkbox"/>
Establish Emergency Decontamination Corridor	M-13	<input type="checkbox"/> <input type="checkbox"/>
Perform Emergency Decontamination (as necessary)	M-1	<input type="checkbox"/> <input type="checkbox"/>
<u>EVALUATOR DIRECTS TEAM 2B TO MITIGATE THE LEAK AND SPILL BY CONDUCTING RETENTION AND COVERING CONTROL MEASURES.</u>		
SKILL (Team 2B)	Skill Sheet	COMPLETED
**Don Appropriate PPE	M-3	<input type="checkbox"/> <input type="checkbox"/>
Perform Retention Control Measure	M-7	<input type="checkbox"/> <input type="checkbox"/>
Perform Absorption Control Measure	M-3	<input type="checkbox"/> <input type="checkbox"/>

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Evaluator name and PSID #:	
Applicant Signature:	
Applicant Printed Name:	
Comments:	

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

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Scenario 1 Directions

This scenario is designed to be completed by a company of four. The company of four will be divided into two teams of two. One team will complete the skills assigned to team 1a and the other team will complete the skills assigned to team 1b. Once the scenario is completed the teams will switch assignments and complete the scenario again. This will ensure that all candidates participate in all skills assigned. It is up to the evaluators to ensure that candidates share in the work equally. Evaluators must be familiar with all associated skill sheets prior to the commencement of the skills examination. Candidate Companies must stay together at all times. It is the responsibility of the evaluators to ensure that candidates do not leave their skill station until they are directed to rotate to the next skill station.

Prior to commencement, evaluators will make team assignments, brief all candidates of the scenario and conduct a PPE inspection. Once this is complete the Lead Evaluator (or designee) will be notified that the crew is ready to begin. Candidates will begin the incident. Team 1a will conduct a scene size up and check for hazards. Each member will report their findings individually to the evaluator. After the size up team 1a will look up the product used in the incident in the Emergency Response Guidebook, determine the appropriate isolation distance and isolate the area. Isolation distances used in the scenario can be simulated. After establishing control of the scene Team 1a will set up emergency decontamination and conduct emergency decontamination as necessary. Team 1b will don appropriate PPE, retain the leaking product and perform absorption control measures.

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Scenario 2

Incident 2

Condition

You are dispatched to the report of a man down behind a warehouse. You arrive and find a victim lying on the ground next to a leaking drum marked Acetone. You are to take control of the incident, conduct a victim rescue, perform emergency decontamination and perform necessary control measures to minimize exposure.

SKILL (Team 1A)	Skill Sheet	COMPLETED
Establish control of the Incident, perform scene size-up (<i>identify any hazards</i>)	M-13	<input type="checkbox"/> <input type="checkbox"/>
Establish isolation perimeter and make notifications	M-13	<input type="checkbox"/> <input type="checkbox"/>
Establish Emergency Decontamination Corridor	M-13	<input type="checkbox"/> <input type="checkbox"/>
Perform Emergency Decontamination (as necessary), transfer victim to EMS	M-1	<input type="checkbox"/> <input type="checkbox"/>
<u>EVALUATOR EXPLAINS THAT THE LIQUID IS TRAVELING TOWARD A STORM DRAIN. TEAM 2B ARE TO EXTRACT THE VICTIM MITIGATE THE SPILL BY CONDUCTING DIKING AND DIVERSION CONTROL MEASURES.</u>		
SKILL (Team 2B)	Skill Sheet	COMPLETED
Don Appropriate PPE	M-4	<input type="checkbox"/> <input type="checkbox"/>
Extract victim		<input type="checkbox"/> <input type="checkbox"/>
Perform Diking Control Measure	M-4	<input type="checkbox"/> <input type="checkbox"/>
Perform Diversion Control Measure	M-6	<input type="checkbox"/> <input type="checkbox"/>

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Evaluator name and PSID #:	
Applicant Signature:	
Applicant Printed Name:	
Comments:	

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Scenario 2 Directions

This scenario is designed to be completed by a company of four. The company of four will be divided into two teams of two. One team will complete the skills assigned to team 2a and the other team will complete the skills assigned to team 2b. Once the scenario is completed the teams will switch assignments and complete the scenario again. This will ensure that all candidates participate in all skills assigned. It is up to the evaluators to ensure that candidates share in the work equally. Evaluators must be familiar with all associated skill sheets prior to the commencement of the skills examination. Candidate Companies must stay together at all times. It is the responsibility of the evaluators to ensure that candidates do not leave their skill station until they are directed to rotate to the next skill station.

Prior to commencement, evaluators will make team assignments, brief all candidates of the scenario and conduct a PPE inspection. Once this is complete the Lead Evaluator (or designee) will be notified that the crew is ready to begin. Candidates will begin the incident. Team 2a will conduct a scene size up and check for hazards. Each member will report their findings individually to the evaluator. After the size up team 1a will look up the product used in the incident in the Emergency Response Guidebook, determine the appropriate isolation distance and isolate the area. Isolation distances used in the scenario can be simulated. After establishing control of the scene Team 1a will set up emergency decontamination and conduct emergency decontamination as necessary. Team 2b will don appropriate PPE, retrieve the victim and transfer him to emergency decontamination. Once that is complete team 2b will perform diking and diversion control measures.

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Scenario 3

Incident 3

Condition

You are dispatched to the report of a possible hazardous materials incident. You arrive and find an automobile accident involving a truck and a tree. The truck appears to be a fuel truck and has a visible placard with UN# 1993 and a large pool of liquid is forming on the ground. The driver is out of the truck and is not contaminated or injured. You are to take control of the incident, identify the product using the ERG and perform necessary control measures to minimize exposure.

SKILL (Team 3A)	Skill Sheet	COMPLETED
Establish control of the Incident, perform scene size-up (<i>identify any hazards</i>)	M-13	<input type="checkbox"/> <input type="checkbox"/>
Establish isolation perimeter and make notifications	M-13	<input type="checkbox"/> <input type="checkbox"/>
Place a Foam Line in service	M-10	<input type="checkbox"/> <input type="checkbox"/>
Perform Vapor Suppression	M-11	<input type="checkbox"/> <input type="checkbox"/>
<u>EVALUATOR EXPLAINS THAT THE LIQUID IS TRAVELING TOWARD A STORM DRAIN. EVALUATOR DIRECTS TEAM 3A TO MITIGATE THE LEAK AND SPILL BY CONDUCTING DIKING AND DIVERTING CONTROL MEASURES.</u>		
SKILL (Team 2B)	Skill Sheet	COMPLETED
Don Appropriate PPE	M-4	<input type="checkbox"/> <input type="checkbox"/>
Perform Diking Control Measure	M-4	<input type="checkbox"/> <input type="checkbox"/>
Perform Diversion Control Measure	M-6	<input type="checkbox"/> <input type="checkbox"/>

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations

Evaluator name and PSID #:	
Applicant Signature:	
Applicant Printed Name:	
Comments:	

INDIANA FIRE ACADEMY TRAINING SYSTEM

A Division of Indiana Dept of Homeland Security

Hazardous Material Operations



Scenario 3 Directions

This scenario is designed to be completed by a company of four. The company of four will be divided into two teams of two. One team will complete the skills assigned to team 3a and the other team will complete the skills assigned to team 3b. Once the scenario is completed the teams will switch assignments and complete the scenario again. This will ensure that all candidates participate in all skills assigned. It is up to the evaluators to ensure that candidates share in the work equally. Evaluators must be familiar with all associated skill sheets prior to the commencement of the skills examination. Candidate Companies must stay together at all times. It is the responsibility of the evaluators to ensure that candidates do not leave their skill station until they are directed to rotate to the next skill station.

Prior to commencement, evaluators will make team assignments, brief all candidates of the scenario and conduct a PPE inspection. Once this is complete the Lead Evaluator (or designee) will be notified that the crew is ready to begin. Candidates will begin the incident. Team 3a will conduct a scene size up and check for hazards. Each member will report their findings individually to the evaluator. After the size up team 3a will look up the product used in the incident in the Emergency Response Guidebook, determine the appropriate isolation distance and isolate the area. Isolation distances used in the scenario can be simulated. After establishing control of the scene Team 3a will set up a foam line and perform vapor suppression. Team 3b will don appropriate PPE and perform diking and diversion control measures to stop the product from going into the storm drain.